



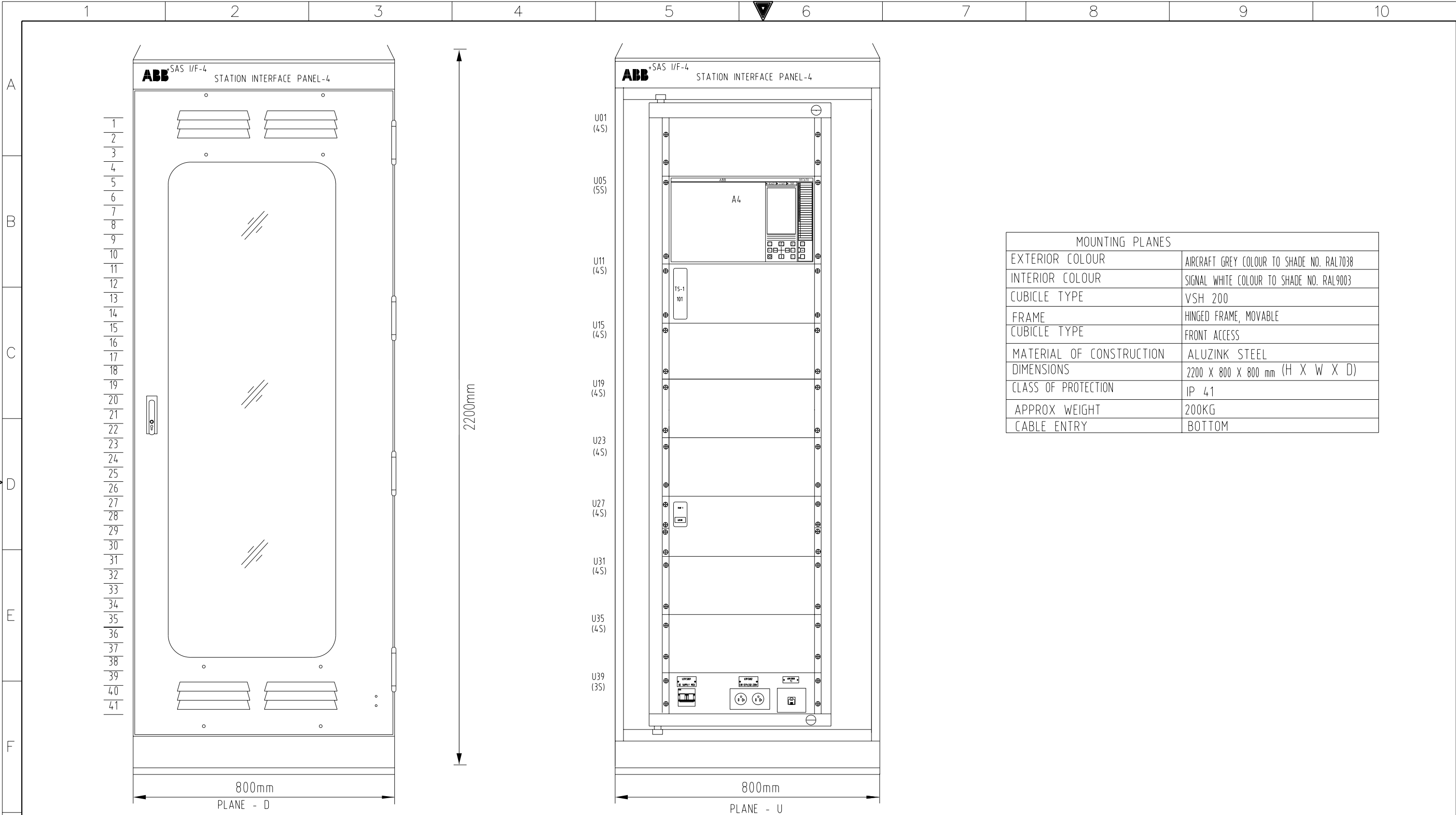


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A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD., 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A																																																																																				
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AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

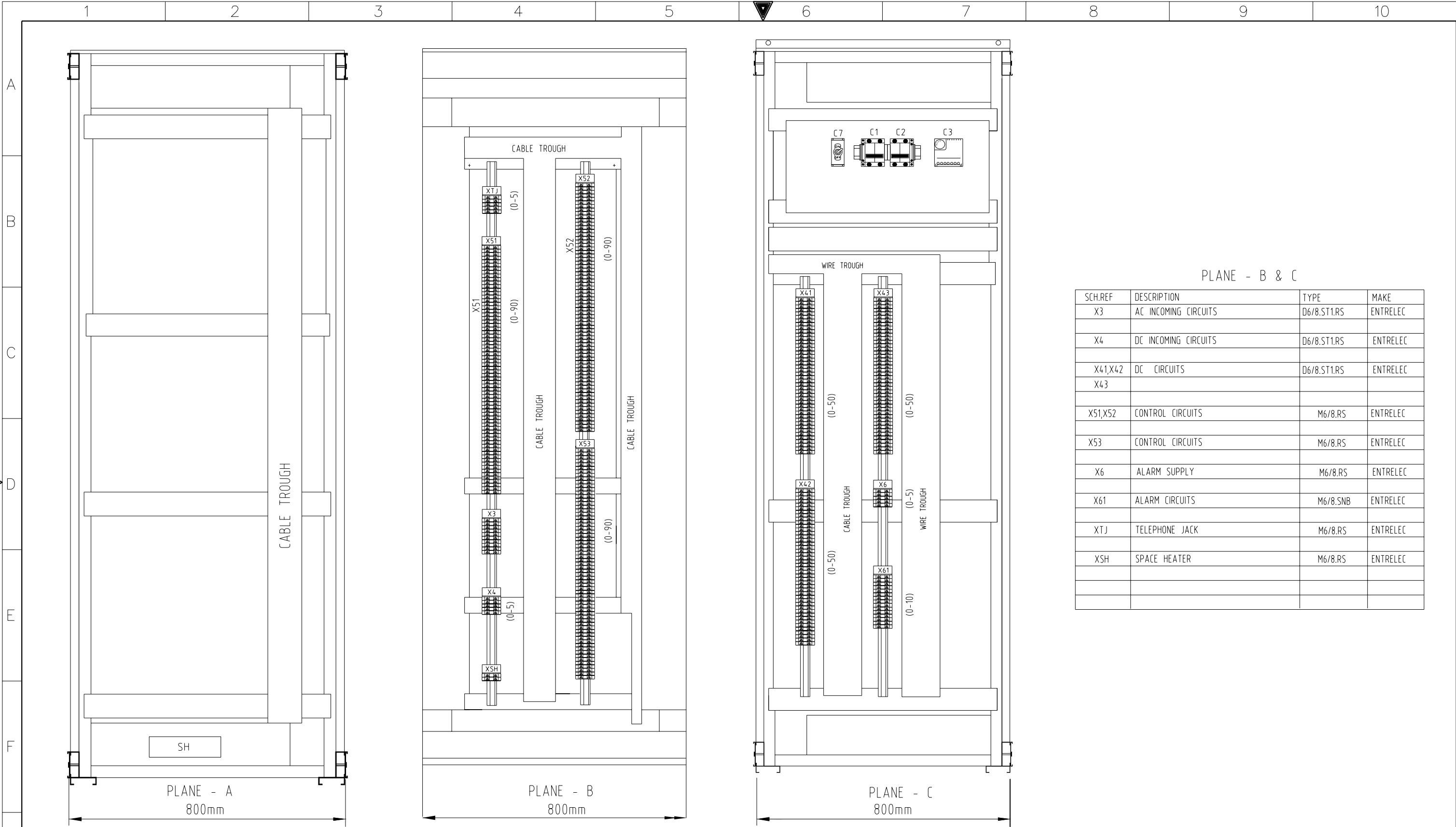
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ASSEMBLY DRAWING	
SAS INTERFACE PANEL +SAS I/F-4	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		نقل الكهرباء	
		National Grid sa	
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.
P	C421	CD-323016	SHT CONT.
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NG/D2-D (2012/01)

DMS	VECTOR	NGD200
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PLANE - B & C

SCH.REF	DESCRIPTION	TYPE	MAKE
X3	AC INCOMING CIRCUITS	D6/8.ST1.RS	ENTRELEC
X4	DC INCOMING CIRCUITS	D6/8.ST1.RS	ENTRELEC
X41,X42 X43	DC CIRCUITS	D6/8.ST1.RS	ENTRELEC
X51,X52	CONTROL CIRCUITS	M6/8.RS	ENTRELEC
X53	CONTROL CIRCUITS	M6/8.RS	ENTRELEC
X6	ALARM SUPPLY	M6/8.RS	ENTRELEC
X61	ALARM CIRCUITS	M6/8.SNB	ENTRELEC
XTJ	TELEPHONE JACK	M6/8.RS	ENTRELEC
XSH	SPACE HEATER	M6/8.RS	ENTRELEC

G	AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		ASSEMBLY DRAWING		<div>نقل الكهرباء</div> <div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div> <div></div>						
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	REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. _____ CTPD _____ ENG. DEPT. _____ AUT-PSAC		RIYADH SAUDI ARABIA		G02	G03							

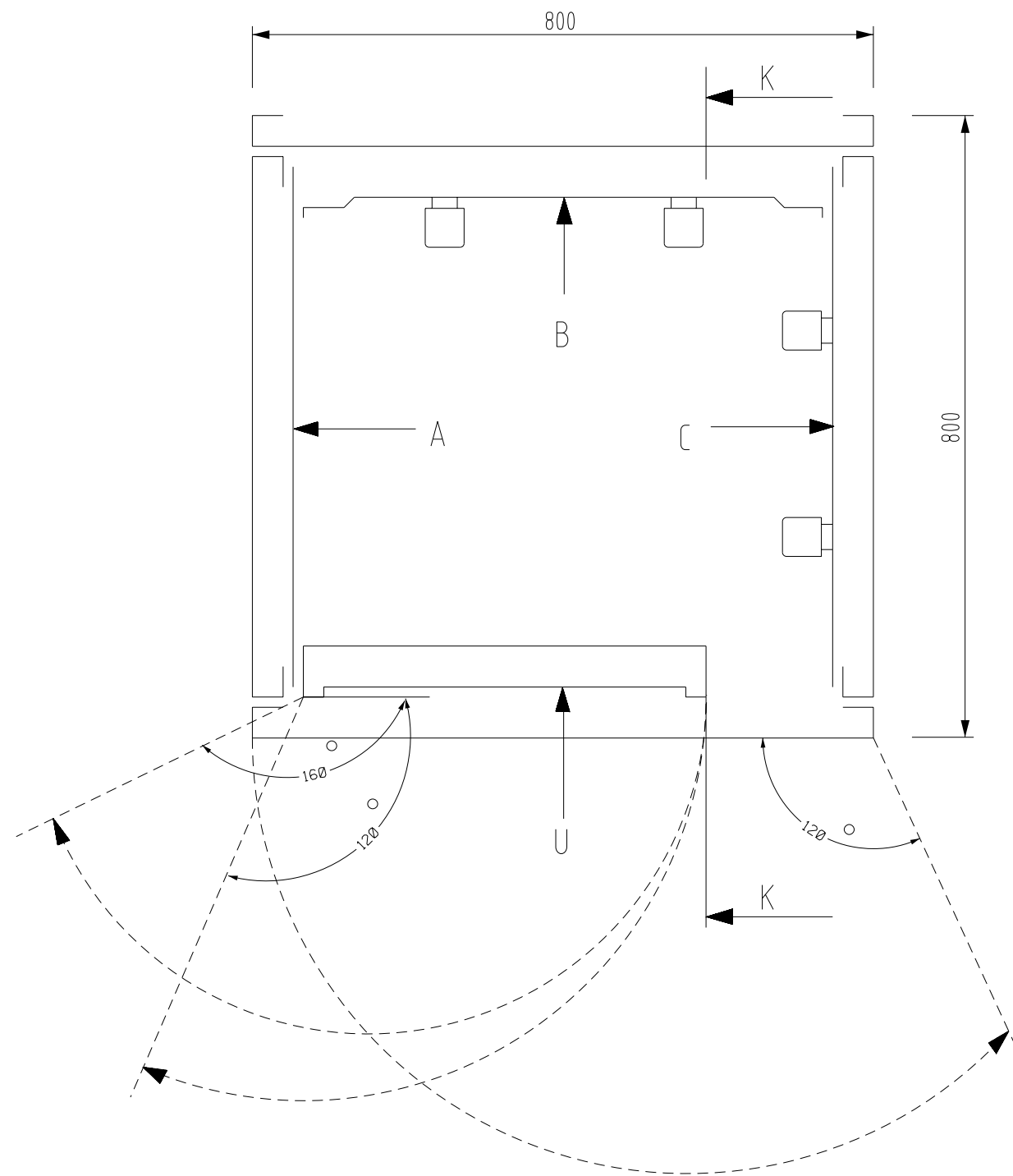
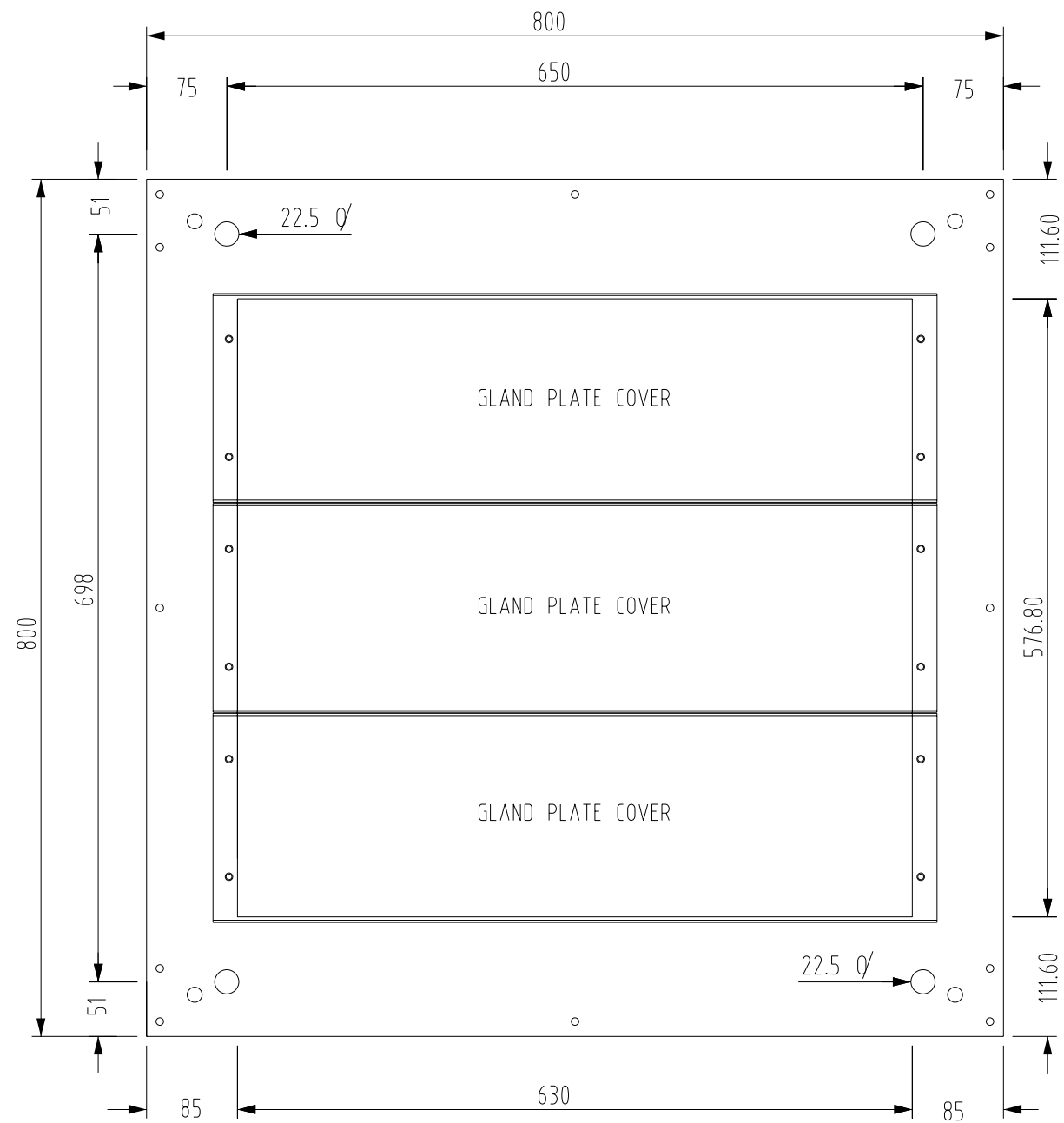
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NG/D2-D (2012/01)

DMS VECTOR NGD200

BASE PLATE/
FOUNDATION

PLAN



AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

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ASSEMBLY DRAWING

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-323016	SHT CONT.	00
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NG/D2-D (2012/01)

DMS VECTOR NGD200

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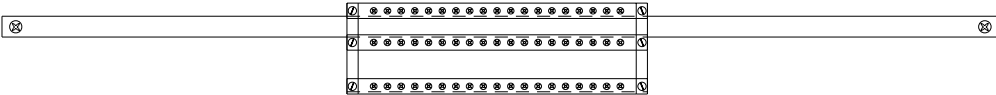
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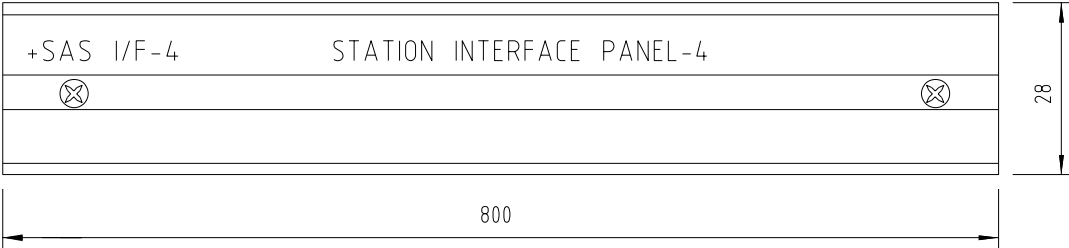
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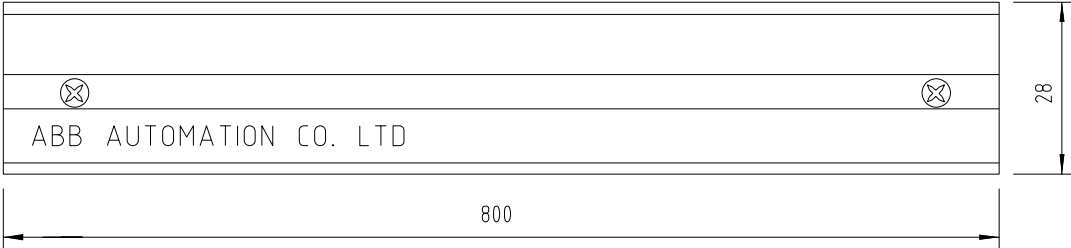


TOP VIEW FOR EARTHING BAR

U PLANE TOP LABEL



U PLANE BOTTOM LABEL



MANUFACTURING LABEL

ABB ABB Automation Co.Ltd.

PROJECT : National Grid SA - S/S 8709

ORDER REFERENCE : 2875 RF S13656

YEAR OF MANUFACTURE : 2013

PANEL NO. : +SAS I/F-4

DRAWING NO. : S13656-CD-323017

MADE IN THE KINGDOM OF SAUDI ARABIA

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

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REV. NO.	DATE	DESCRIPTION	

ASSEMBLY DRAWING

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء







INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
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A	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N		SHEET NO.	QTY.	TYPE	MAKE	ORDERING INFORMATION	COUNTRY OF ORIGIN
				STATION INTERFACE PANEL-4							
	1	U05.5001	A4	STATION COMMON ALARM SWITCHING EQUIPMENT WITH FOLLOWING SPECIFICATION		291 TO 296	1	REC 670	ABB	1MRK 002814-AC	SWEDEN
B				AUX : EL=90-250V DC							
				FREQ : 50/60HZ							
				BINARY INPUT : 14 NOS(PER CARD 16 INPUTS RL=110-125DC)							
C	2	U11.101	TS-1	TEST SWITCH FOR REC 670 (A4)		245	1	RTXP18	ABB	RK 926 115-AN	SWEDEN
D	3	U27.101	74IF	DUAL TARGET RELAY (REVERSE FLAG) (A1 DC FAIL/SPARE)		245	1	RXSF1	ABB	RK 271 019 AN	SWEDEN
				CONTACTS :1NO+2NC PER COIL							
				AUX.VOLT :1NO+2NC PER COIL							
E	4			MCB 2 POLE 6A, FOR DC SUPPLY WITH 2NC AUXILIARY CONTACT		216	1	S 282 UC-K6 S2-H02	ABB	GH S282 0164 R0377 GH S270 1916 R0003	GERMANY
		U39.5001	Q1	Q1 IF+ SUPPLY							FRANCE
	5	U39.5002	C01 C02	CONVENIENCE OUTLET 10A, 127V AC CONVENIENCE OUTLET 10A, 220V AC		211	1	USM45 & USMS45	LEGRAND	74140 & 74180	
F			C1,C2	MINIATURE CIRCUIT BREAKER, 2 POLE, 10A FOR CONVENIENCE OUTLET WITH AUXILIARY SWITCH, 1NO + 1NC CONTACTS		211	2	S202-C10 S2C-H11L	ABB	2CDS 253 001 R0104 2CDS 200 936 R0001	GERMANY
	6		C3	THERMOSTAT FOR SPACE HEATER, 5-60 C		211	1	SK 3110	RITTAL	SK 3110	THIWAN
	7	U39.5003	TJ	TELEPHONE JACK 1GANG 4WIRE		211	1	EDF410	EDISON	EDF410	SWEDEN
G	8		C7	ON/OFF SWITCH FOR SPACE HEATER		211	1	M2SS1-10B MCBH-10	ABB	1SFA 611 200 R1006 1SFA 611 605 R1101	
	9		DS	DOOR SWITCH FOR CONTROL OF CUBICLE INTERNAL ILLUMINATION LAMP		211	1	LS30P	ABB	1SBV 010213 R1202	SWEDEN
	10			INTERNAL ILLUMINATION CUBICLE LAMP SUITABLE FOR 127V AC, 60Hz SUPPLY, 20W		211	1	T-4	SUNON	SP-20W	
	11		SH	SPACE HEATER, 150w, 120V, 60Hz		211	1	MICA	GRUPPO	1FZEK 006 C001	ITALY
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NG/D2-D (2012/01)

DMS VECTOR NGD200

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B	SR. NO.	ITEM DESIGNATION	D E S C R I P T I O N			SHEET.NO.	QTY.	TYPE	MAKE	ORDERING INFORMATION	COUNTRY OF ORIGIN										
	11	X3	SPRING LOADED TERMINAL BLOCKS FOR DISCONNECTABLE AC CIRCUITS			301	10	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400	FRANCE										
		X4	SPRING LOADED TERMINAL BLOCK FOR DISCONNECTABLE DC CIRCUITS			301,302	5	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400	FRANCE										
		X41,X42	SPRING LOADED TERMINAL BLOCK FOR DISCONNECTABLE DC CIRCUITS			301,302	50,50	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400	FRANCE										
		X43					50														
		X51,X52	SPRING LOADED TERMINAL BLOCK FOR DC PROTN. CIRCUITS			301,302	90,90	M6/8.RS	ENTRELEC	1SNA 115 688 R2500	FRANCE										
		X53					90														
		X61,X6	KNIFE TYPE TERMINAL BLOCKS FOR COMMON ALARM CIRCUITS			302	10,5	M6/8.SNB	ENTRELEC	1SNA 115 685 R1200	FRANCE										
		XTJ	SPRING LOADED TERMINAL BLOCKS FOR TELEPHONE JACK			302	5	M6/8.RS	ENTRELEC	1SNA 115 688 R2500	FRANCE										
		XSH	SPRING LOADED TERMINAL BLOCKS FOR SPACE HEATER			302	3	M6/8.RS	ENTRELEC	1SNA 115 688 R2500	FRANCE										
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LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE
U05.5001	U05.5001 A4	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U11.101	U11.101 TS-1	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm
U27.101	U27.101 74IF/SPARE	ALUMINUM PAPER FOIL	BLACK LETTERS	50X10mm	3mm

LABEL REF.	LABEL ENGRAVING	MATERIALS	ENGRAVING	LABEL SIZE	LETTER SIZE
C1	C1 127V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C2	C2 220V AC SUPPLY MCB	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C3	C3 THERMOSTAT	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
C7	C7 ON/OFF SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
DS	DS DOOR SWITCH	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
IL	IL ILLUMINATION LAMP	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm
SH	SH SPACE HEATER	TRAFOLITE	BLACK LETTERS ON WHITE BACKGROUND	50X15mm	4mm

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A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD., 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A																																																																							
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C																																																																															
D	CONTRACTOR : ABB Contracting Company																																																																														
	CLIENT : National Grid sa																																																																														
	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY																																																																														
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CONTENTS		ABB SHT.NO.	REV.00	REV.01	REV.02	REV.03
COVER SHEET		000	X			
CONTENTS SHEET		001	X			
GRAPHICAL SYMBOLS FOR DIAGRAMS		011	X			
GRAPHICAL SYMBOLS FOR DIAGRAMS		012	X			
COMMON LEGEND		013	X			
FERRULE AND WIRING DETAILS		014	X			
PRIMARY SYSTEM		051	X			
AC SUPPLY FOR ILLUMINATION & POWER SOCKET		211	X			
AUXLIARY CONTACTS		212	X			
DC SUPPLY DISTRIBUTION		216	X			
STATION INTERFACE PANEL BINARY INPUTS		231	X			
STATION INTERFACE PANEL BINARY INPUTS		232	X			
STATION INTERFACE PANEL BINARY INPUTS		233	X			
STATION INTERFACE PANEL BINARY INPUTS		234	X			
STATION INTERFACE PANEL BINARY INPUTS		235	X			
STATION INTERFACE PANEL BINARY INPUTS		236	X			
STATION INTERFACE PANEL BINARY INPUTS		237	X			
STATION INTERFACE PANEL BINARY INPUTS		238	X			
STATION INTERFACE PANEL BINARY INPUTS		239	X			
STATION INTERFACE PANEL BINARY INPUTS		240	X			
STATION INTERFACE PANEL BINARY INPUTS		241	X			

CONTENTS		ABB SHT.NO.	REV.00	REV.01	REV.02	REV.03
STATION INTERFACE PANEL BINARY INPUTS		242	X			
STATION INTERFACE PANEL BINARY INPUTS		243	X			
STATION INTERFACE PANEL BINARY INPUTS		244	X			
DC SUPERVISION CIRCUIT		245	X			
COMMON ALARM CIRCUITS		290	X			
BLOCK REFERENCE		291	X			
BLOCK REFERENCE		292	X			
BLOCK REFERENCE		293	X			
BLOCK REFERENCE		294	X			
BLOCK REFERENCE		295	X			
BLOCK REFERENCE		296	X			
TERMINAL BLOCK REFERENCE		301	X			
TERMINAL BLOCK REFERENCE		302	X			

AS-BUILT BY _____ DATE _____

CONTRACT NO. 11131113/00

JOB ORDER NO. S-13656

CONTENTS SHEET

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709

S-13656

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SAUDI ARABIA

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SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FRAME CONNECTION		MAIN CONTACT OF A CIRCUIT BREAKER		RELAY WITH TWO MAKE CONTACTS, ONE OF THEM DELAYED WHEN OPERATING
	EARTH CONNECTION		PASSING MAKE CONTACT CLOSING MOMENTARILY DURING OPERATION AND RELEASE		RELAY WITH TWO ACTUATORS AND A TWO STABLE POSITIONS
	RESISTOR		BREAK CONTACT DELAYED WHEN OPERATING		
	VARIABLE RESISTOR		MAKE CONTACT DELAYED WHEN RELEASING		SIGNALLING LAMP
	RESISTOR WITH PRESET ADJUSTMENT		TWO MECHANICAL LINKS CROSSING WITHOUT CONNECTION		MECHANICAL INDICATOR WITH AUTOMATIC RESET
	CAPACITOR		JUNCTION OF MECHANICAL LINKS		MECHANICAL INDICATOR WITH NON-AUTOMATIC RESET
	SEMICONDUCTOR DIODE USED AS A CAPACITIVE DEVICE		AUTOMATIC RESET		ELECTRICALLY CONTROLLED MECHANICAL INDICATOR WITH AUTOMATIC RESET
	OPEN CONTACT, MAKE CONTACT		NON-AUTOMATIC RESET		ELECTRICALLY CONTROLLED MECHANICAL INDICATOR WITH NON-AUTOMATIC RESET
	CLOSED CONTACT, BREAK CONTACT		SWITCHING DEVICE WITH MANUAL OPERATION AND WITH AUTOMATIC RESET		RELAY WITH MAKE CONTACT
	CHANGE-OVER CONTACT, BREAK BEFORE MAKE		SWITCHING DEVICE WITH MANUAL OPERATION AND WITH NON-AUTOMATIC RESET		RELAY WITH CHANGE-OVER CONTACT
	MAKE CONTACT WHICH IS EARLY WHEN OPERATING AND LATE WHEN RELEASING		CHANGE-OVER SWITCHING DEVICE WITH MANUAL CONTROL		RELAY WITH MAKE CONTACT, DELAYED WHEN OPERATING
	BREAK CONTACT WHICH IS LATE WHEN OPERATING AND EARLY WHEN RELEASING		RELAY WITH MAKE CONTACT, DELAYED WHEN RELEASING		RELAY WITH MAKE CONTACT, DELAYED WHEN OPERATING AND RELEASING
	SWITCHING DEVICE WITH MANUAL CONTROL				
	MAKE CONTACT DELAYED WHEN OPERATING				
	BREAK CONTACT DELAYED WHEN RELEASING				
	MAKE CONTACT DELAYED WHEN OPERATING AND RELEASING				
	MAIN CONTACT OF A SWITCH DISCONNECTOR				
	MAIN CONTACT OF A DISCONNECTOR				

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656	GRAPHICAL SYMBOLS FOR DIAGRAMS		<div>الشركة الوطنية لنقل الكهرباء</div> <div> National Grid SA</div>				
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REV. NO.	DATE	DESCRIPTION								

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LEGENDS

±R1	DC SUPPLY - MAIN PROTECTION
±R2	DC SUPPLY - SECONDARY PROTECTION
±R3	DC SUPPLY - BACK UP PROTECTION
±IT	DC SUPPLY - INTER TRIP
FL	DC SUPPLY - FLASHING CIRCUIT
BB RS±	DC SUPPLY - BUS BAR - PROTECTION RESET
BB CBF±/CBF±	DC SUPPLY - CBF PROTECTION
R	RESET BUS - ALARM SYSTEM
CR	CONTROL ROOM
ECC	ENERGY CONTROL CENTRE
LOCAL	THE LOCATION OF CONTROLLED DEVICE
REMOTE	ANY OTHER LOCATION NOT LOCAL
ON	CB NORMALLY OPEN AUXILIARY CONTACT
OFF	CB NORMALLY CLOSED AUXILIARY CONTACT
A	COMMON
T	TEST POSITION
S	SERVICE POSITION
CS	CLOSE IN SERVICE POSITION
CT	CLOSE IN TEST POSITION
LS	LOCAL SERVICE
LT	LOCAL TEST
LC	LOCAL CLOSE
LO	LOCAL OPEN
RO	REMOTE OPEN

NOTES

LABELS

WHITE LABEL WITH BLACK LETTERING WILL BE PROVIDED FOR ALL MOUNTED APPARATUS EQUIPMENT IDENTIFICATION AND FUNCTION REFERENCE LABEL WILL BE PROVIDED FOR FRONT MOUNTED EQUIPMENTS OF THE PANEL AND EQUIPMENT IDENTIFICATION LABEL WILL BE PROVIDED FOR INTERNALLY MOUNTED EQUIPMENTS

WIRING

PVC INSULATED 600V GRADE
2.5 SQ.mm. YELLOW COLOURED FOR CT CIRCUITS
2.5 SQ.mm. RE COLOURED FOR VT CIRCUITS
1.5 SQ.mm. GREY COLOURED FOR DC SUPPLY, SCADA AND CONTROL CIRCUITS
1.5 SQ.mm. BLUE COLOURED FOR COMMON ALARM SIGNALS
2.5 SQ.mm. BLACK COLOURED FOR AVC AND AC CIRCUITS
2.5 SQ.mm. YELLOW/GREEN COLOURED FOR EARTHING CONNECTIONS
FOLLOWING MARKERS SHALL BE PROVIDED ON FOLLOWING WIRES:
+ SIGN FOR DC + WIRE
- SIGN FOR DC - WIRE

LUGS

A. CT CIRCUITS- RING TYPE
B. OTHER CIRCUITS - SPADE TYPE

FERULLING

YELLO TUBE 3.2 mm FOR 1.5SQ mm WIRES AND 4.2 FOR 2.5 SQ mm WIRES (AS PER 31 - TMSS-1, RE.0)

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COMMON LEGENDS	
SAS INTERFACE PANEL	+SAS I/F-4
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

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		National Grid sa	
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			013 014 00

	1	2	3	4	5	6	7	8	9	10
A										
B										
C										
D										
E										
F										
G										

FOR 132kV RELAY & CONTROL, PROTN. PANELS

TS

17A

17B

TS

18A

4

TS:17A/21-9

9

8

21-8/TS-18A

8

21

TS-17B/X4-5

+

X4-5/TS-17B

TB

X4

5

TB

X3

7

X3-7/21-4

21

5

TS

17A

17B

TS

18A

4

TS:17A/21-9

9

8

21-8/TS-18A

8

21

TS-17B/X4-5

+

X4-5/TS-17B

TB

X4

5

TB

X3

7

X3-7/21-4

21

5

AS PER IEC-391 FIG 14a (W/O SUPPLEMENTARY/IDENTIFICATION MARK)

FOR 132kV PANELS INTERPANEL WIRING

PANEL REF.:
+R03.1

X6

5

X6:5/+R03.2-X6:10

X6:10/+R03.1-X6:5

PANEL REF.:
+R03.2

X6

10

AS PER IEC-391 FIG 14d (W/O SUPPLEMENTARY/IDENTIFICATION MARK)

WIRES -
PVC insulated, stranded,
coated annealed copper
conductor graded for 1000V

LUGS -
Pre-Insulated

a. CT Circuits - 2.5 Sqmm PVC Yellow colour

b. VT Circuits - 2 Sqmm PVC Red colour

c. DC, & CONTROL Circuits - 1.5 Sqmm
PVC Grey colour

d. Alarm Circuits - 1.5 Sqmm PVC Blue colour

e. AVC & AC Circuits - 2.5 Sqmm PVC Black colour

f. Earth Circuits - 2.5 Sqmm PVC Yellow/Green colour

a(CT Circuits - Ring type

b(Other Circuits - Spade type

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FERRULE AND WIRING DETAILS

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709 S-13656

RIYADH SAUDI ARABIA

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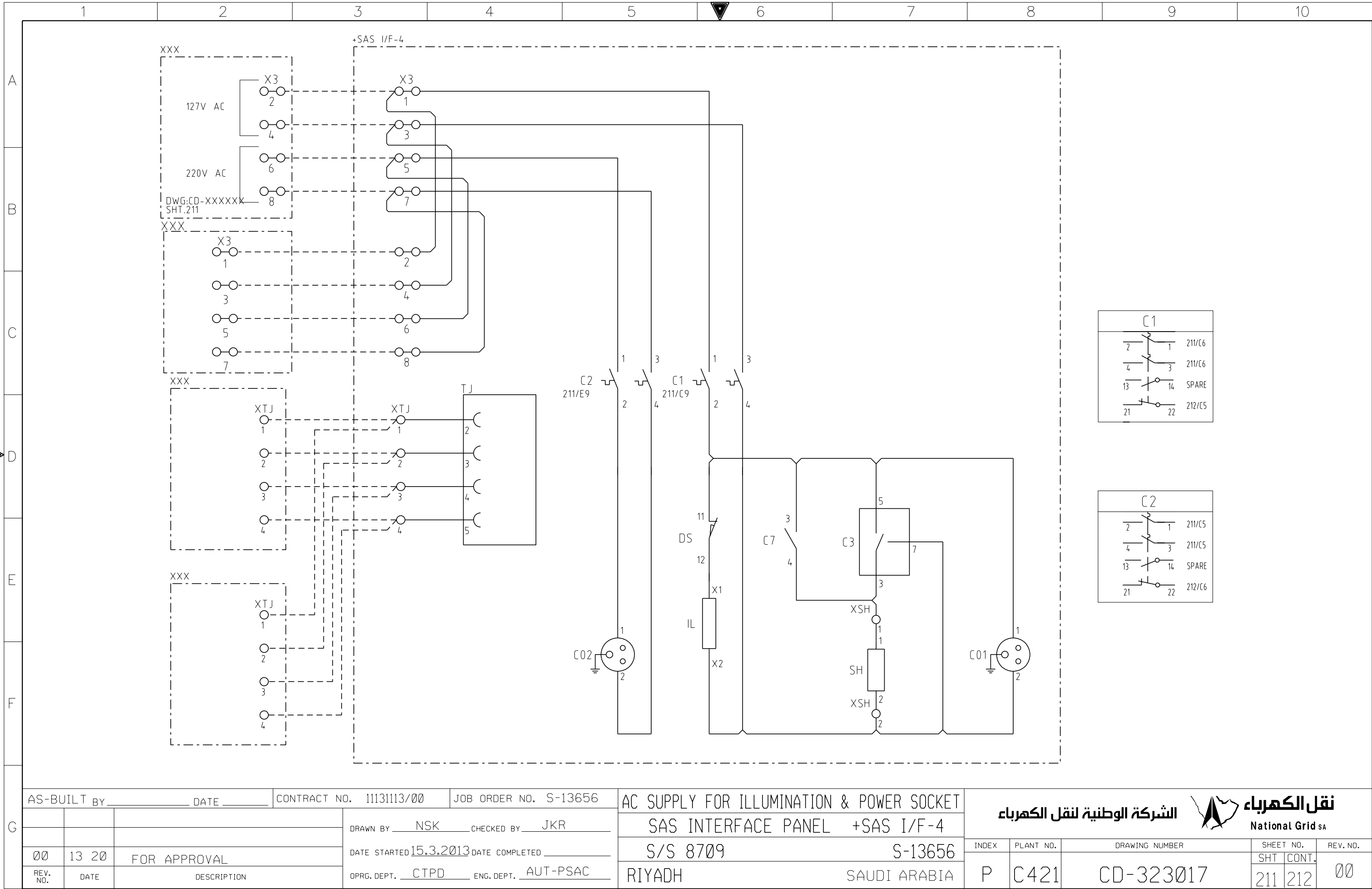
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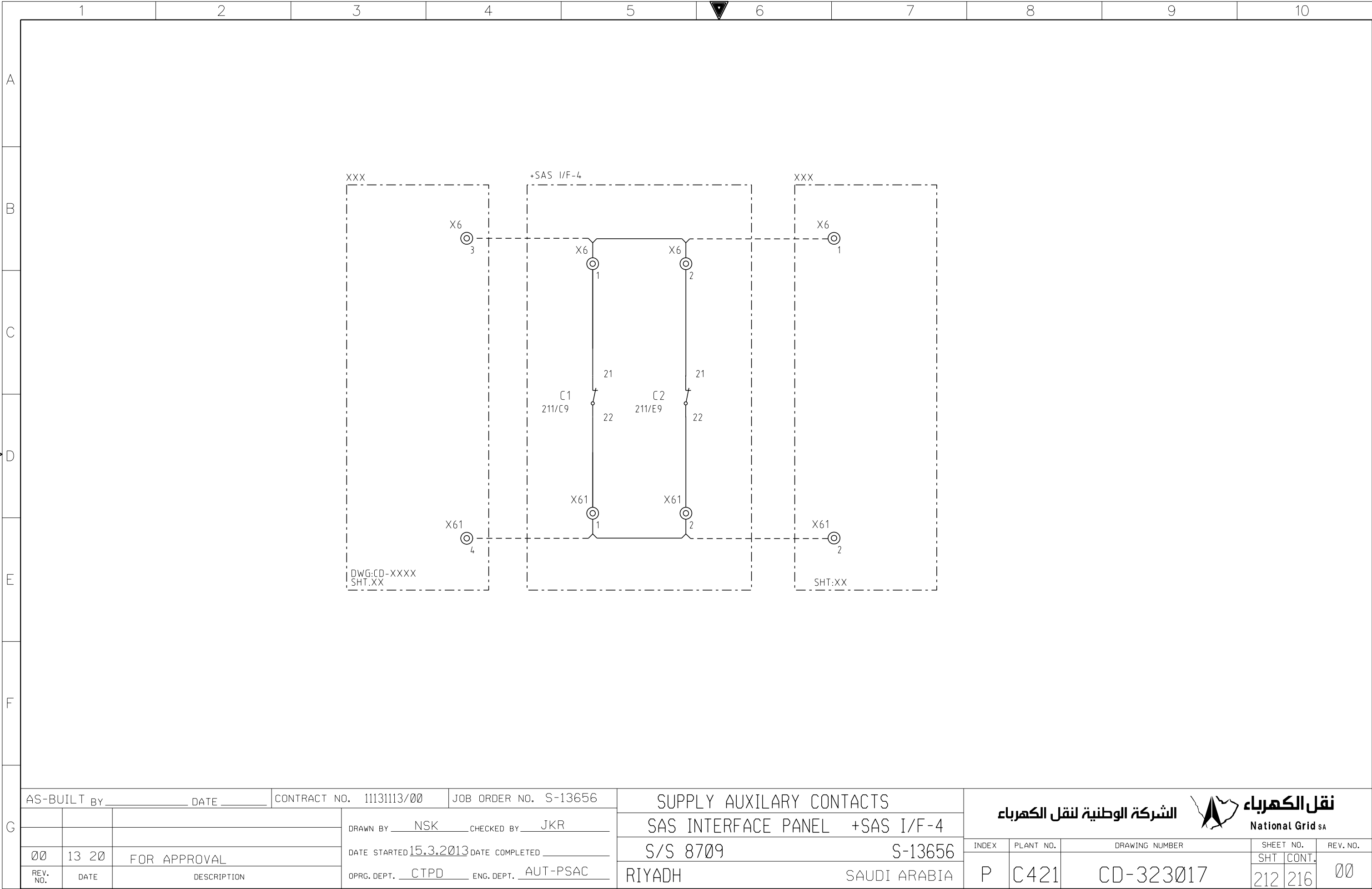
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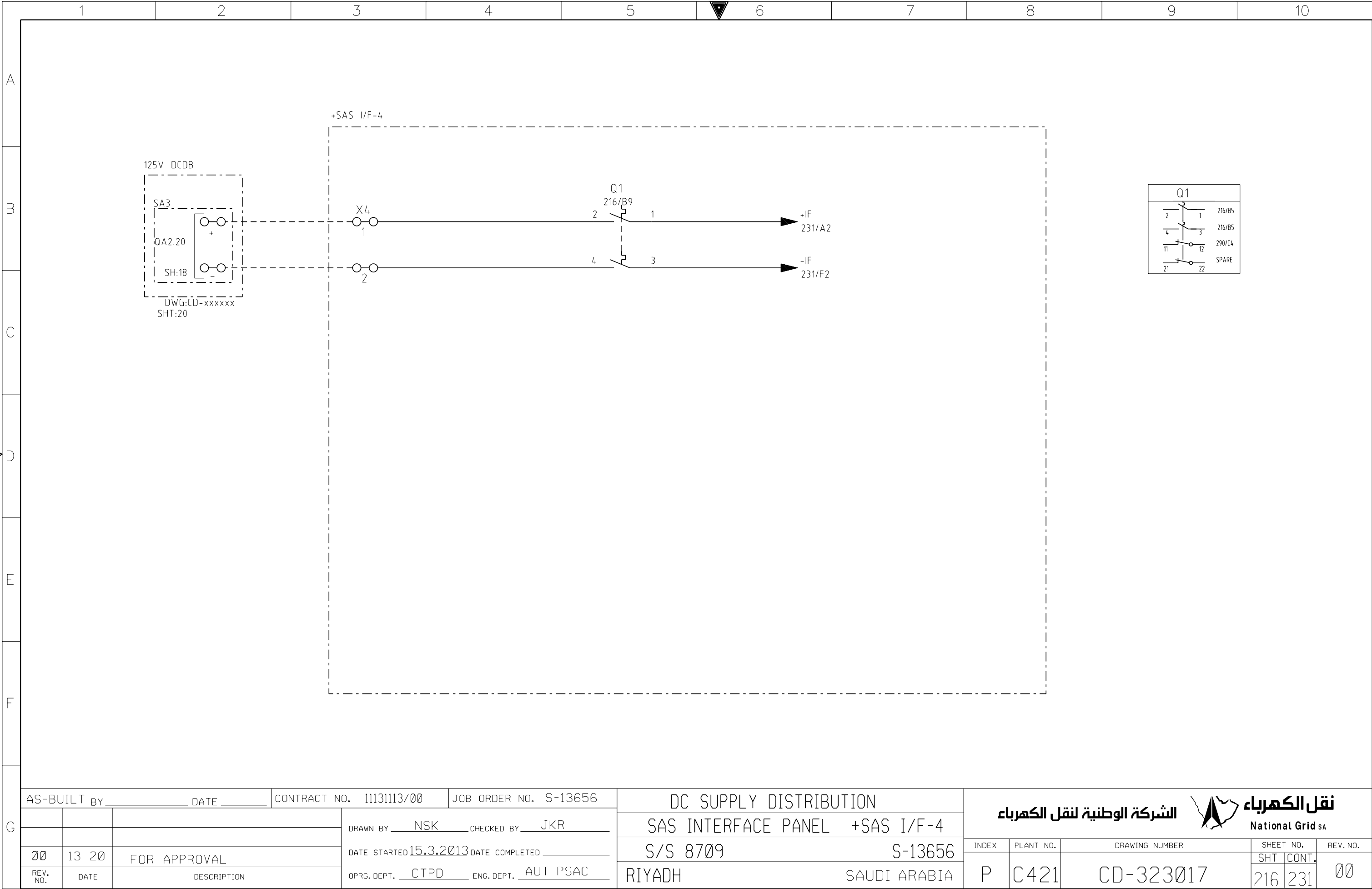
DMS VECTOR

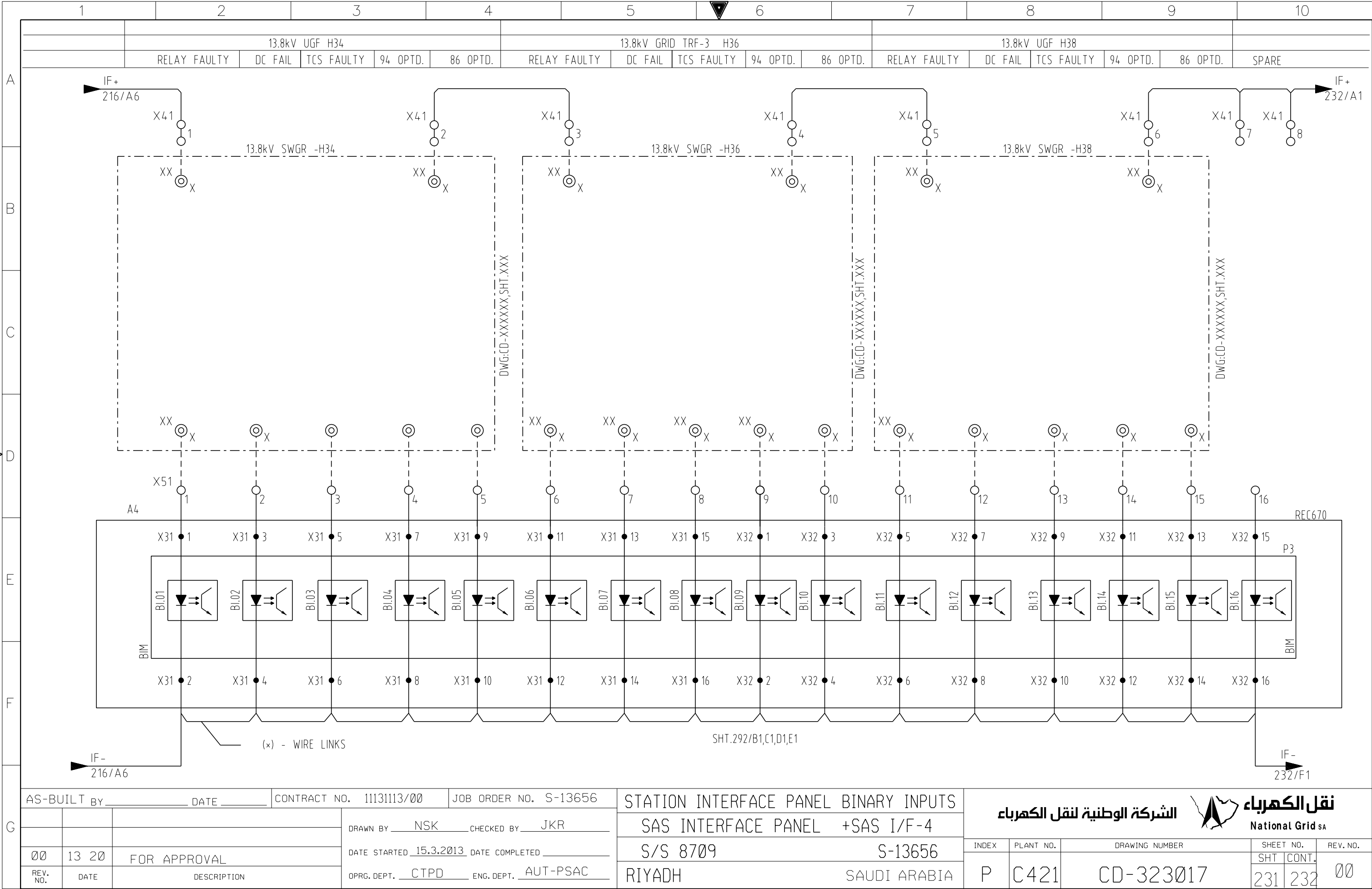
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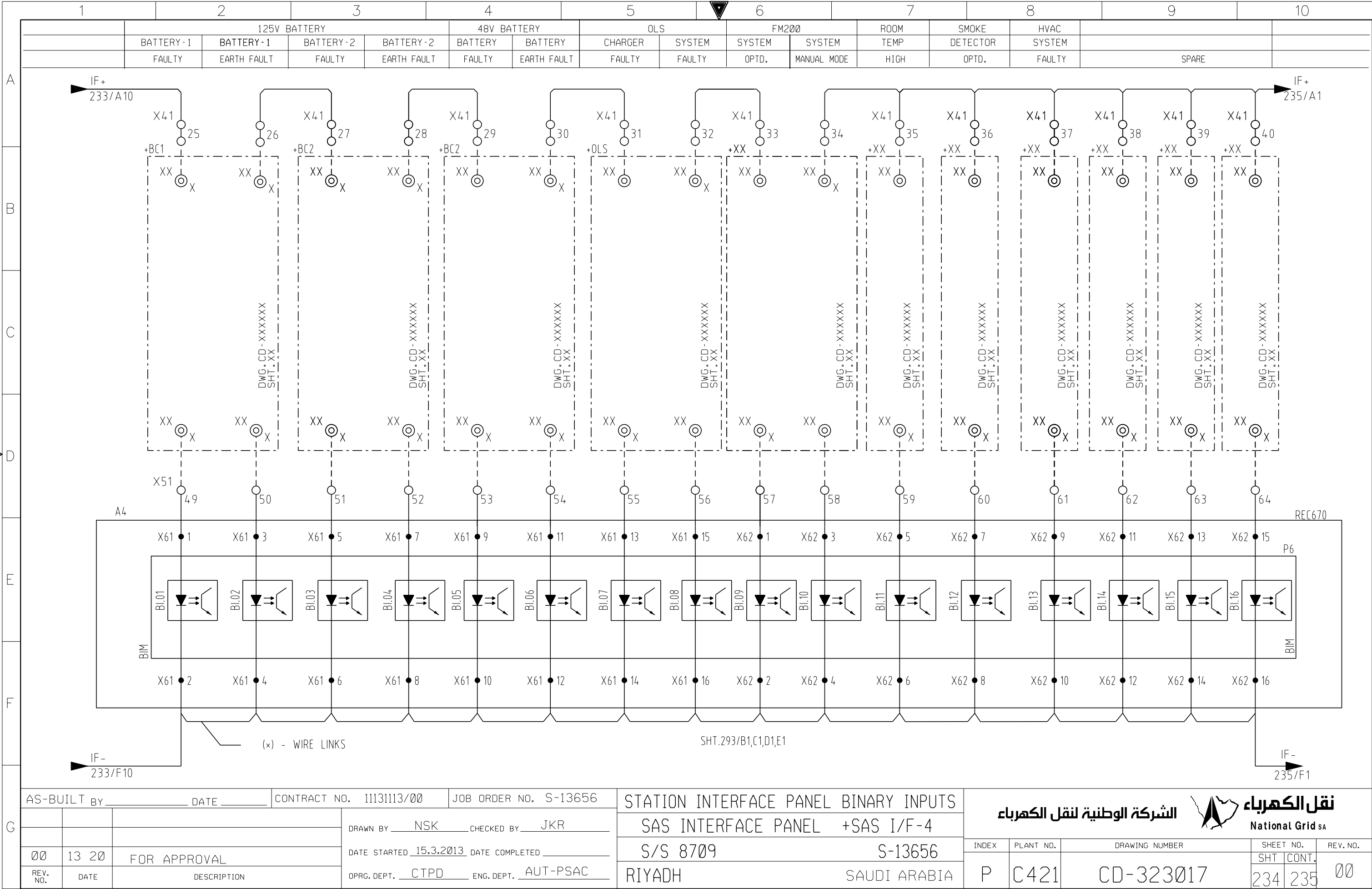
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STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709

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RIYADH

SAUDI ARABIA

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235

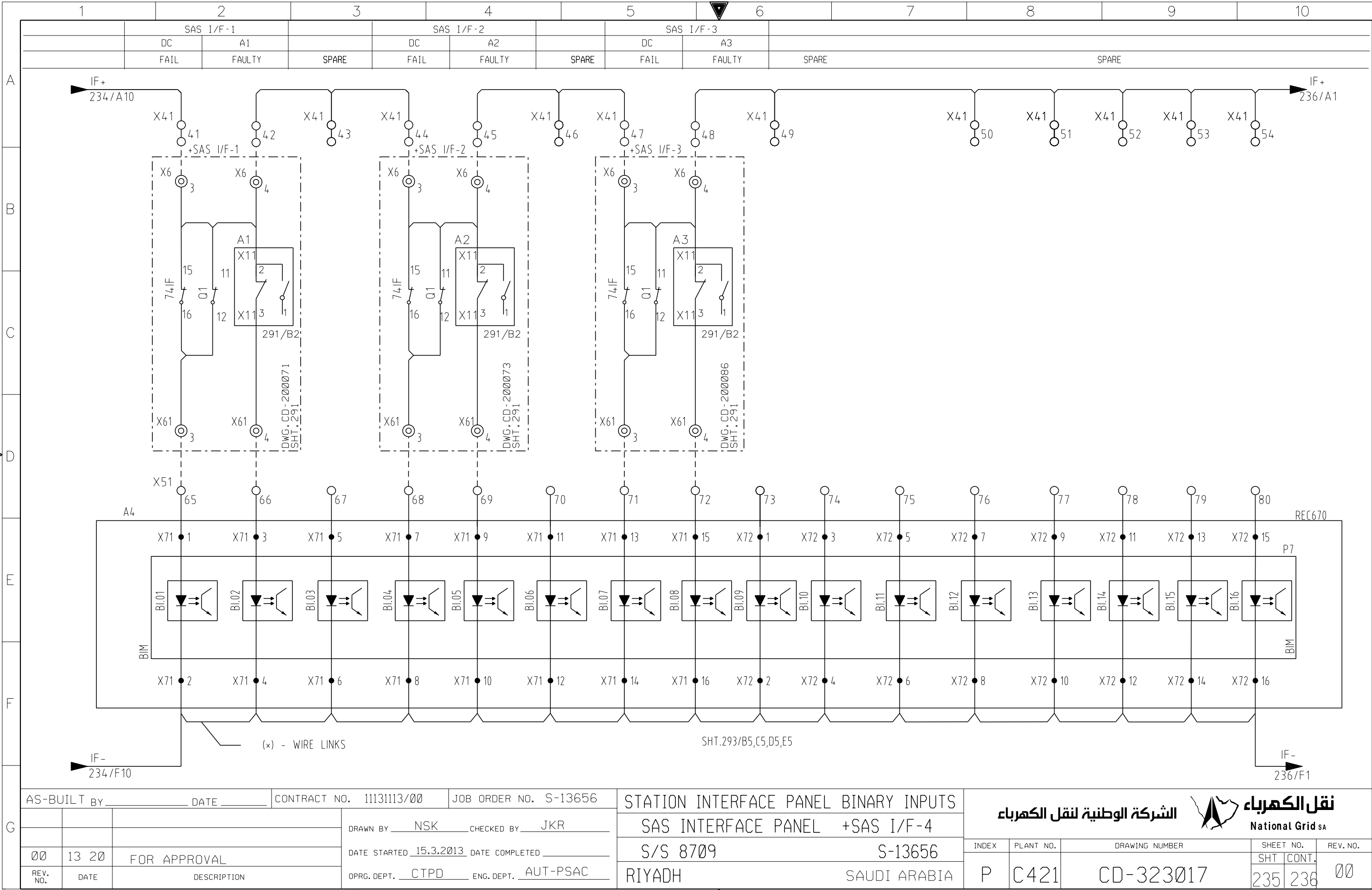
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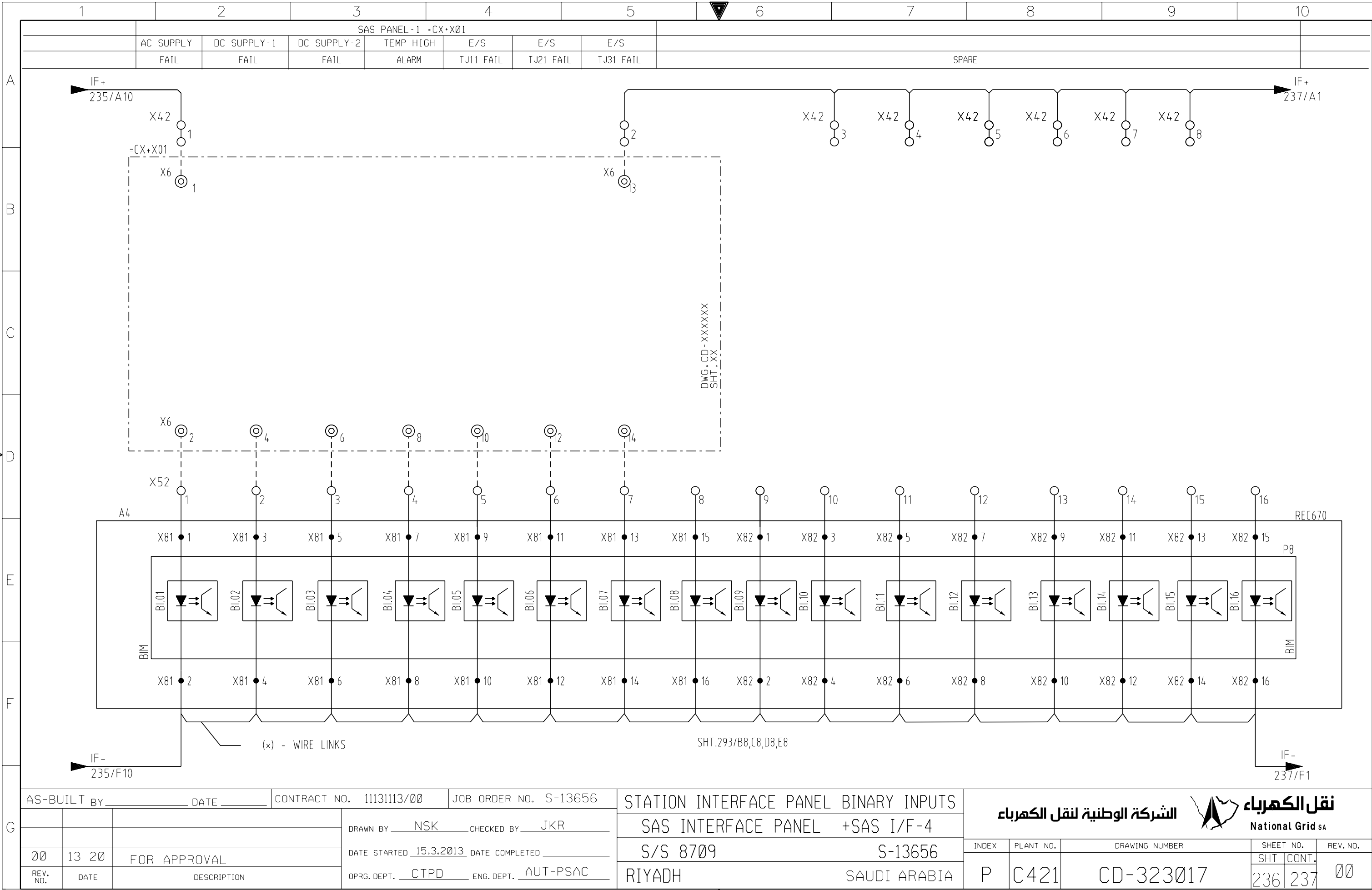
NG/D2-D (2012/01)

DMS

VECTOR

NGD200

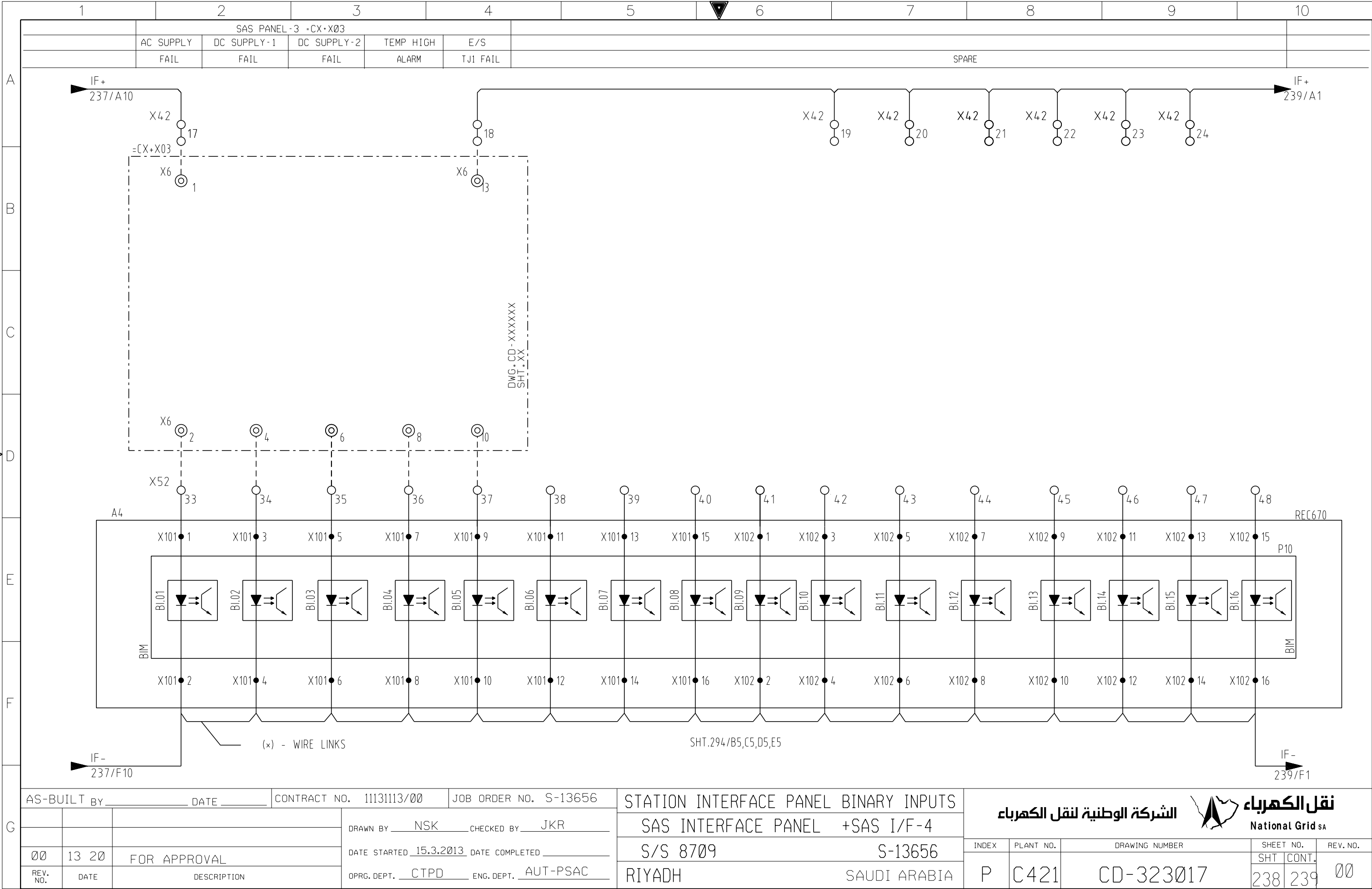


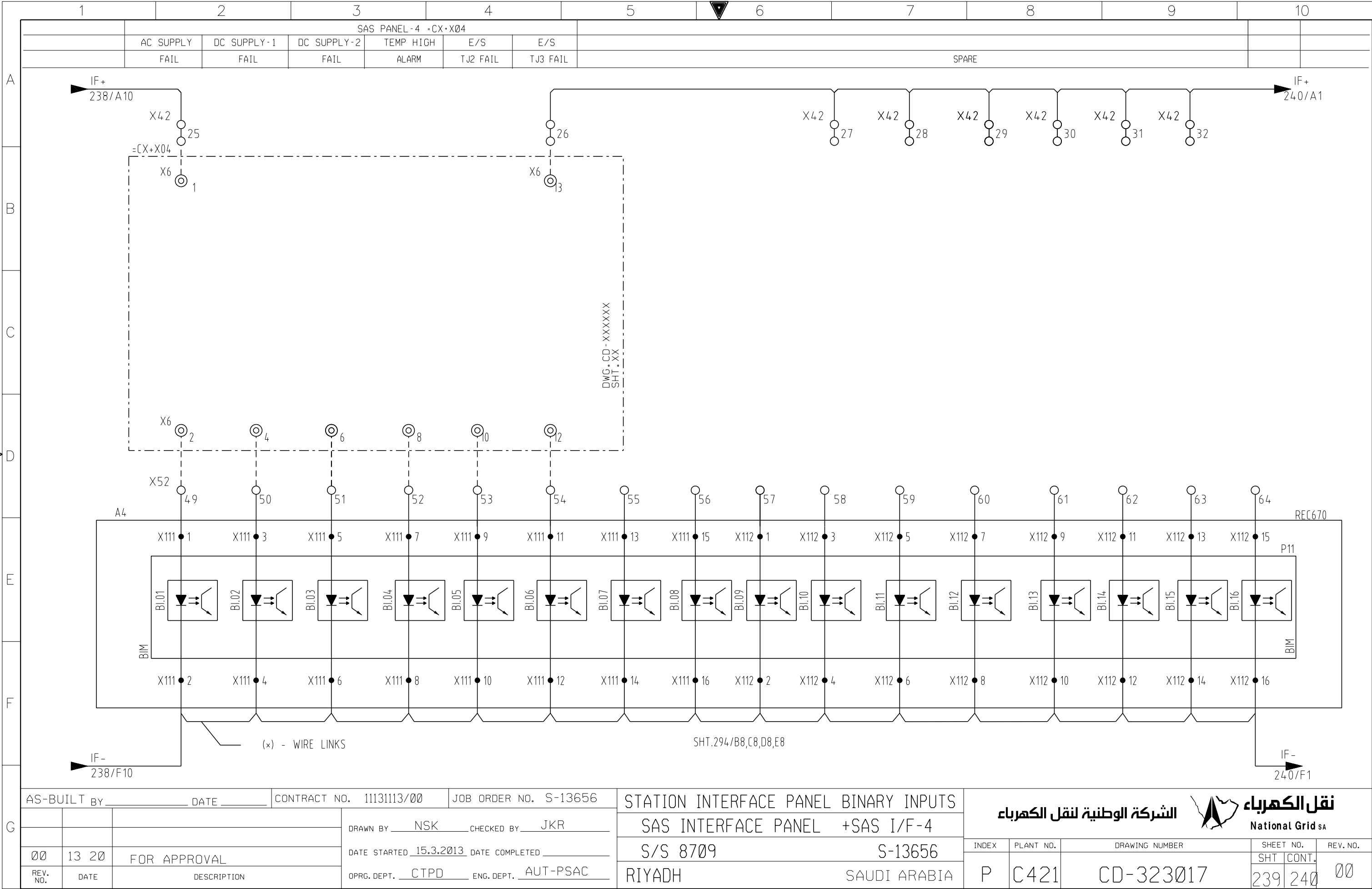


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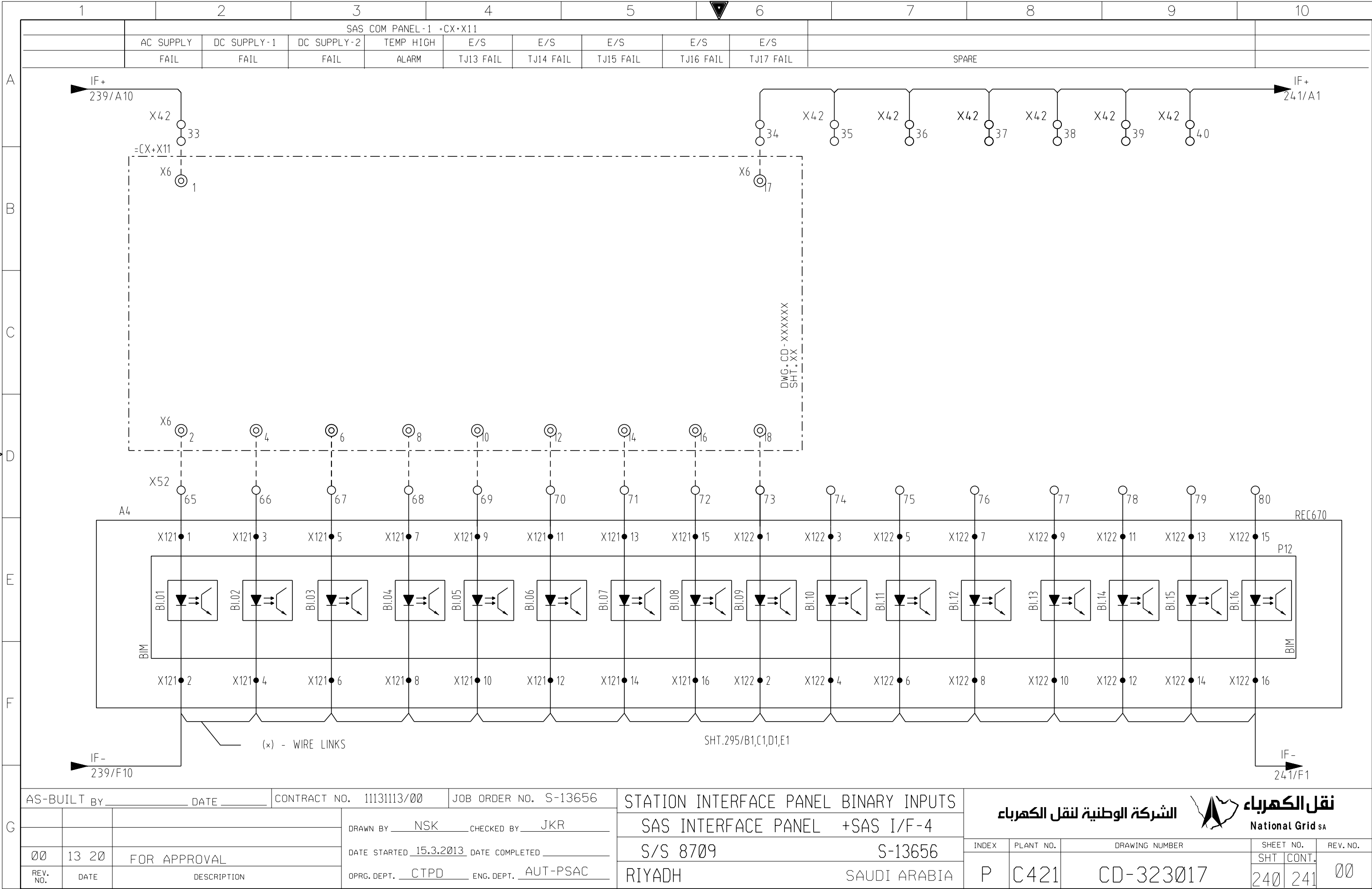
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SAS INTERFACE PANEL +SAS I/F-4	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

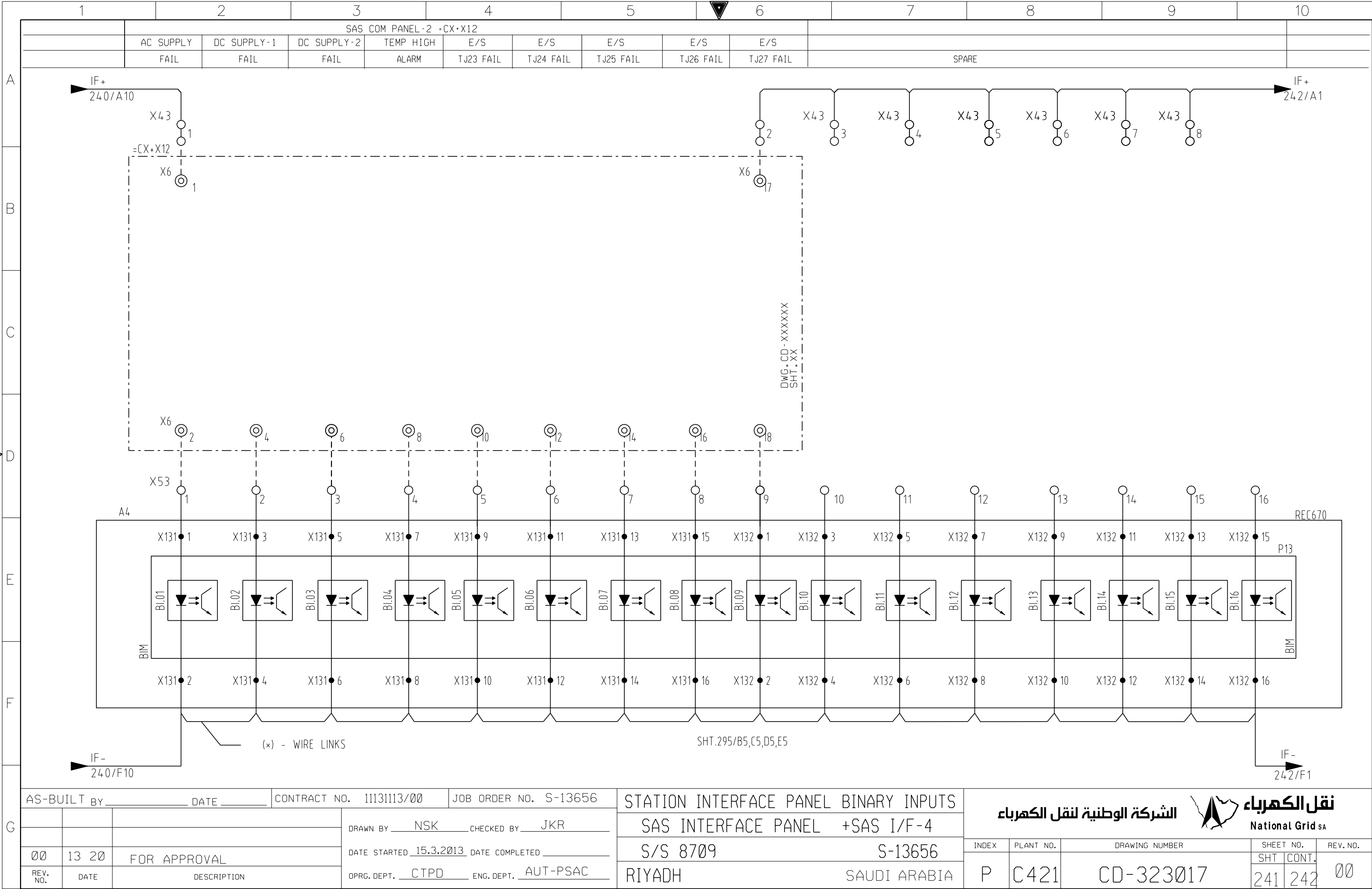
الشركة الوطنية لنقل الكهرباء				نقل الكهرباء		
				National Grid SA		
INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
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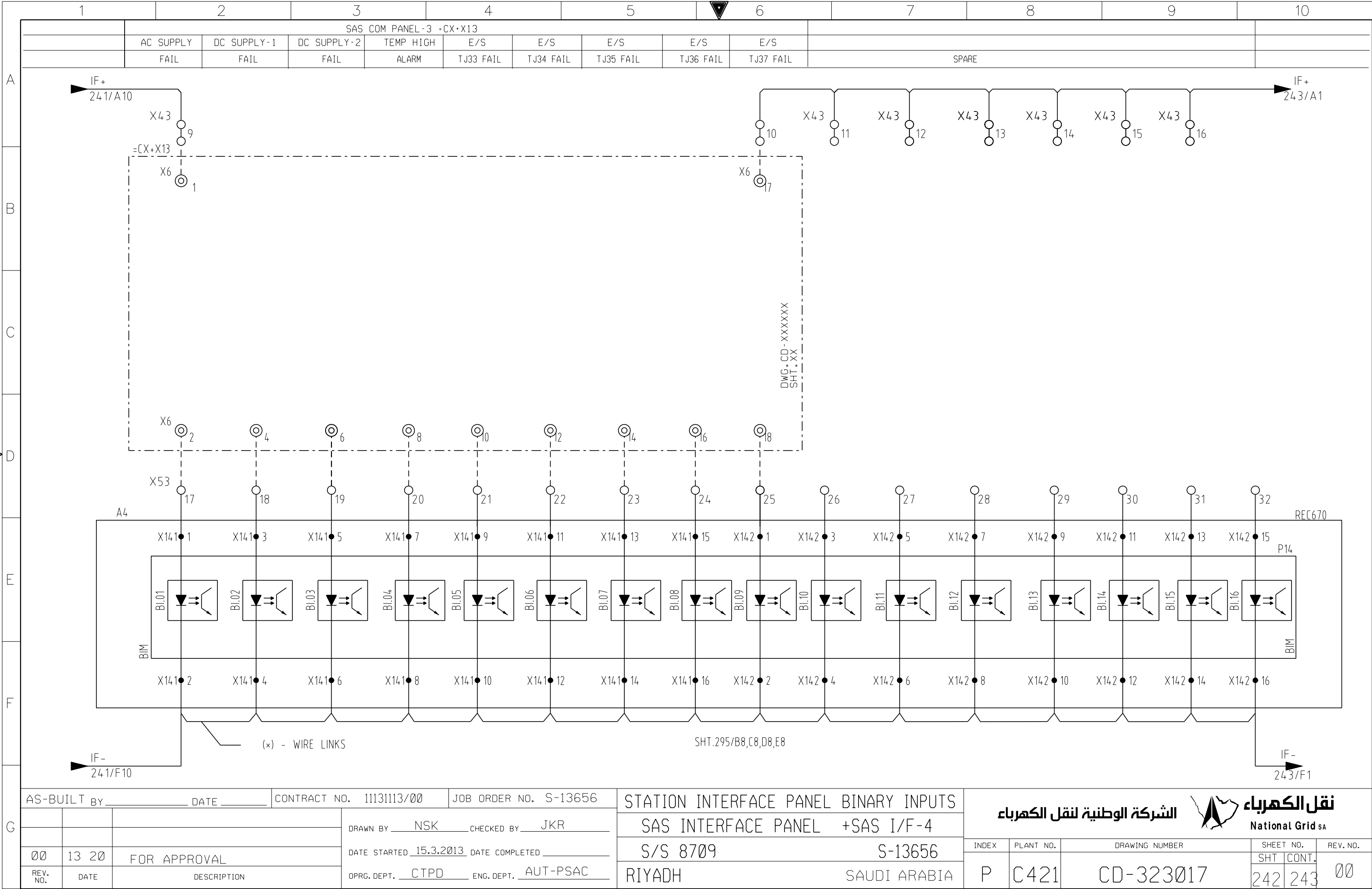




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STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709

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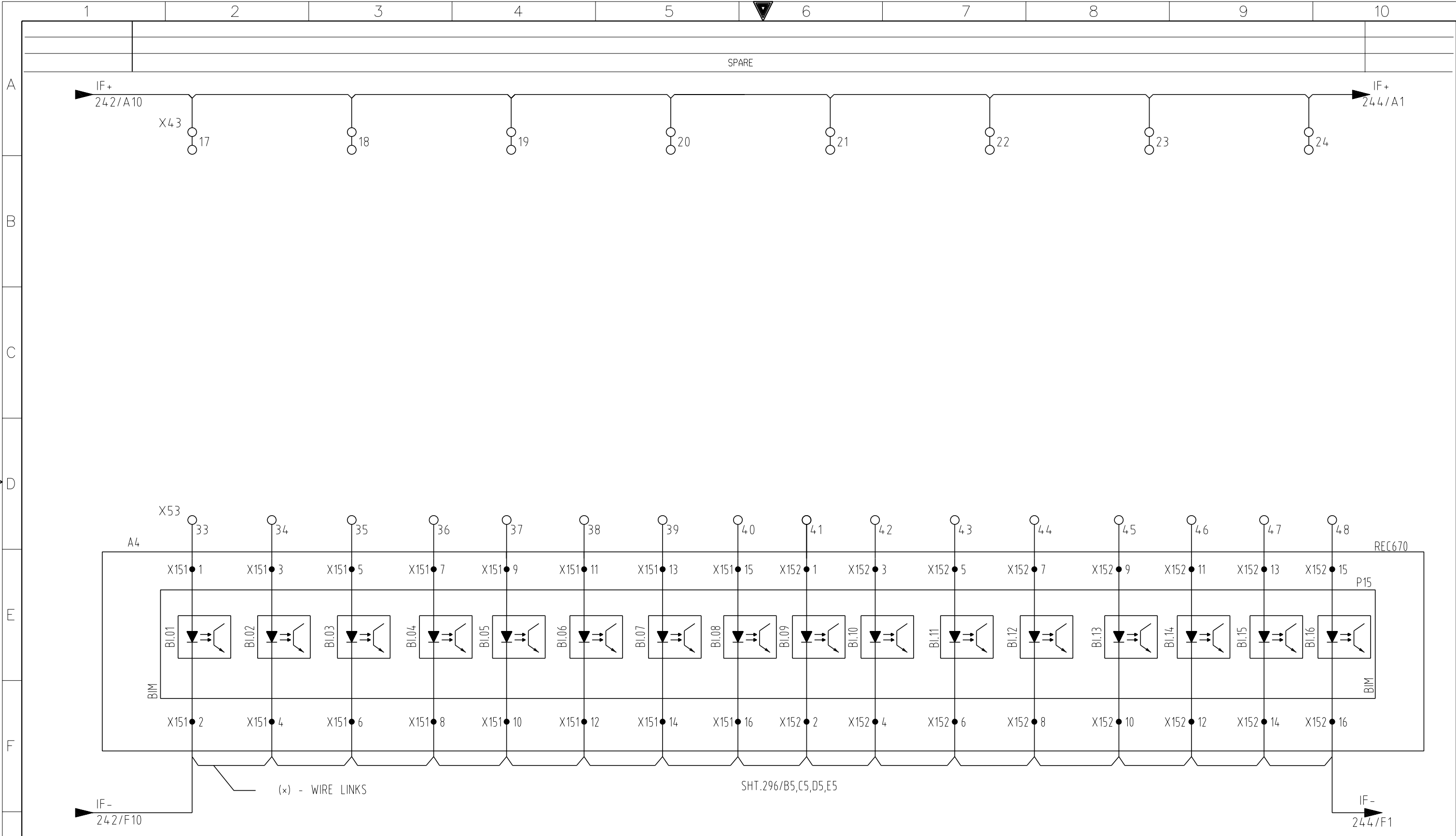
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NG/D2-D (2012/01)

DMS

VECTOR

NGD200



G

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STATION INTERFACE PANEL BINARY INPUTS					
SAS INTERFACE PANEL +SAS I/F-4					
S/S 8709			S-13656		
RIYADH			SAUDI ARABIA		

نقل الكهرباء

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National Grid sa

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PLANT NO.

DRAWING NUMBER

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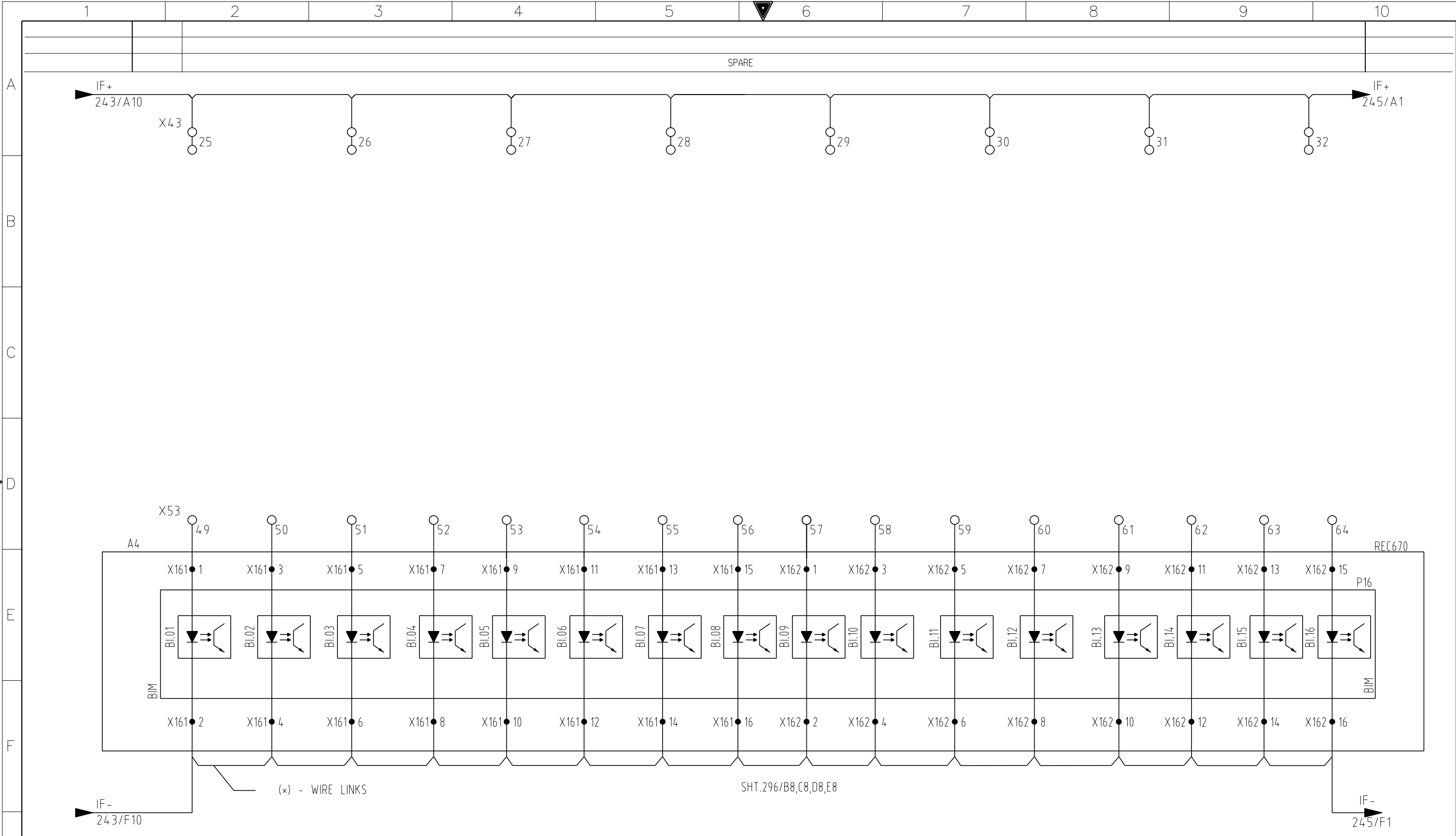
SHT

CONT.

243

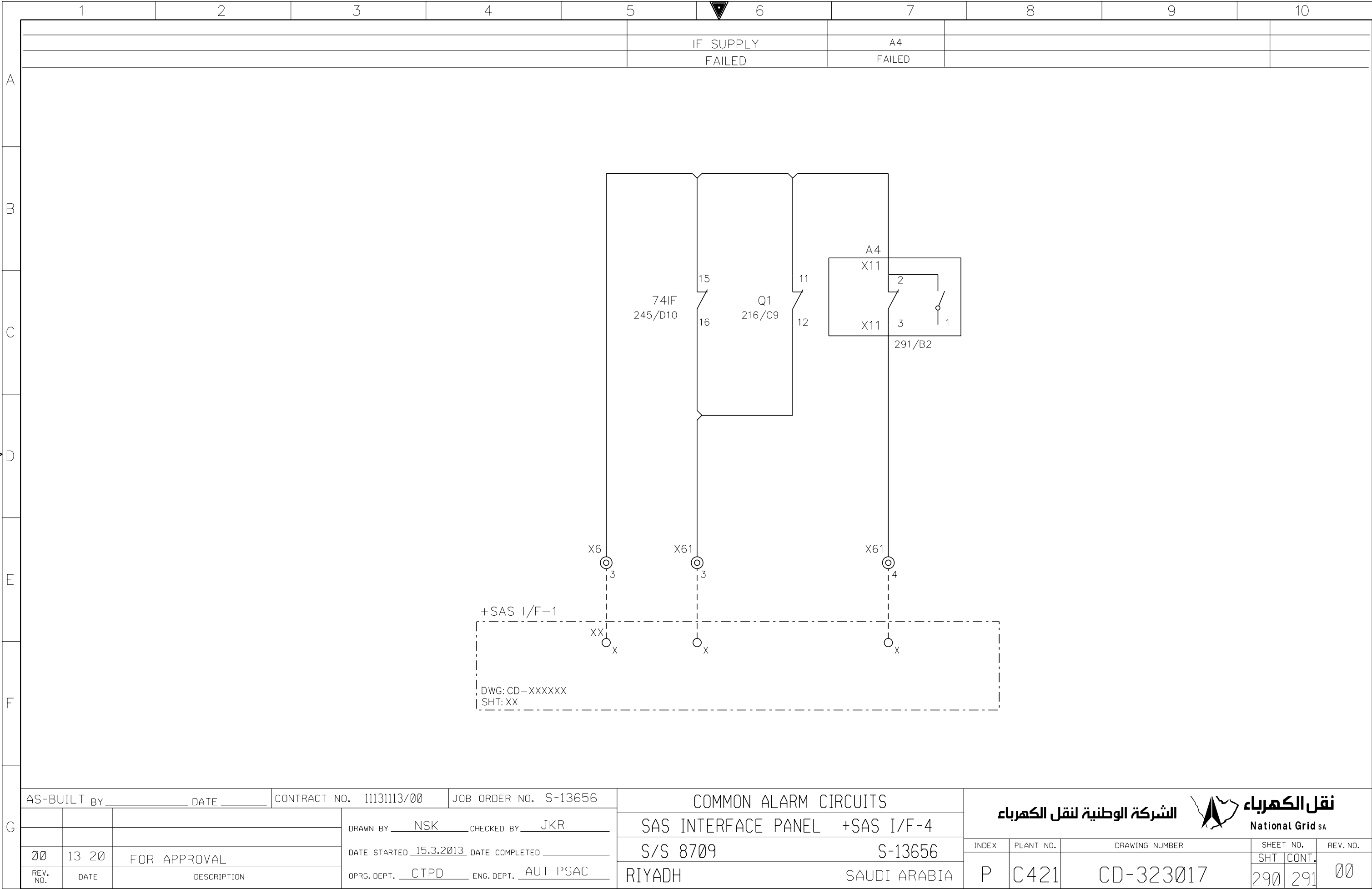
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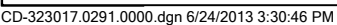


G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		STATION INTERFACE PANEL BINARY INPUTS				<div>نقل الكهرباء</div> <div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div>						
				DRAWN BY <u>NSK</u> CHECKED BY <u>JKR</u>		SAS INTERFACE PANEL +SAS I/F-4											
	00	13 20	FOR APPROVAL		DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		S/S 8709		S-13656		INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH		SAUDI ARABIA		P	C421	CD-323017		SHT	CONT.	00

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	1	2	3	4	5	6	7	8	9	10
A	A4									
BINARY INPUT CARD										
B	A4BIM P3REC670LOCATION=P3PLANT ADAPTED CONFIGURATION									
C	+ --- X31									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
	+ --- 16BI.16//									
	- --- 16									
	+ --- X32									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
+ --- 14BI.22//										
- --- 15BI.23//										
+ --- 16BI.24//										
- --- 16										
D	SHT.231/D1 TO D10									
E	A4BIM P4REC670LOCATION=P4PLANT ADAPTED CONFIGURATION									
F	+ --- X41									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
	+ --- 16BI.16//									
	- --- 16									
	+ --- X42									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
+ --- 14BI.22//										
- --- 15BI.23//										
+ --- 16BI.24//										
- --- 16										
SHT.232/D1 TO D10										
G	A4BIM P5REC670LOCATION=P5PLANT ADAPTED CONFIGURATION									
	+ --- X51									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
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	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
	+ --- 16BI.16//									
	- --- 16									
	+ --- X52									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
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	- --- 9BI.17//									
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	+ --- 12BI.20//									
	- --- 13BI.21//									
+ --- 14BI.22//										
- --- 15BI.23//										
+ --- 16BI.24//										
- --- 16										
SHT.233/D1 TO D10										
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BLOCK REFERENCE										
SAS INTERFACE PANEL +SAS I/F-4										
S/S 8709 S-13656										
RIYADH SAUDI ARABIA										
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P C421 CD-323017 292 293 00										

	1	2	3	4	5	6	7	8	9	10
A	A4									
B	BINARY INPUT CARD									
C										
D										
E										
F										
G										

SHT.234/D1 TO D10

SHT.235/D1 TO D10

SHT.236/D1 TO D10

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00	13 20	FOR APPROVAL	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>			
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BLOCK REFERENCE	
SAS INTERFACE PANEL +SAS I/F-4	
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			293	294	

NG/D2-D (2012/01)

DMS	VECTOR	NGD200
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1		2		3		4		5		6		7		8		9		10	
A																			
B																			
C																			
D																			
E																			
F																			
G																			
AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656										BLOCK REFERENCE					<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>				
DRAWN BY <u>NSK</u> CHECKED BY <u>JKR</u>										SAS INTERFACE PANEL +SAS I/F-4					INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.				
DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____										S/S 8709 S-13656					P C421 CD-323017 294 295 00				
OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>										RIYADH SAUDI ARABIA									
REV. NO. DATE DESCRIPTION																			

A4

BIM P9

REC670

LOCATION=P9

PLANT ADAPTED CONFIGURATION

X91

1 BI.01 //

2 BI.02 //

3 BI.03 //

4 BI.04 //

5 BI.05 //

6 BI.06 //

7 BI.07 //

8 BI.08 //

9 BI.09 //

10 BI.10 //

11 BI.11 //

12 BI.12 //

13 BI.13 //

14 BI.14 //

15 BI.15 //

16 BI.16 //

SHT.237/D1 TO D10

A4

BIM P10

REC670

LOCATION=P10

PLANT ADAPTED CONFIGURATION

X101

1 BI.01 //

2 BI.02 //

3 BI.03 //

4 BI.04 //

5 BI.05 //

6 BI.06 //

7 BI.07 //

8 BI.08 //

9 BI.09 //

10 BI.10 //

11 BI.11 //

12 BI.12 //

13 BI.13 //

14 BI.14 //

15 BI.15 //

16 BI.16 //

SHT.238/D1 TO D10

A4

BIM P11

REC670

LOCATION=P11

PLANT ADAPTED CONFIGURATION

X111

1 BI.01 //

2 BI.02 //

3 BI.03 //

4 BI.04 //

5 BI.05 //

6 BI.06 //

7 BI.07 //

8 BI.08 //

9 BI.09 //

10 BI.10 //

11 BI.11 //

12 BI.12 //

13 BI.13 //

14 BI.14 //

15 BI.15 //

16 BI.16 //

SHT.239/D1 TO D10

NG/D2-D (2012/01)

DMS VECTOR

NGD200

A

B

C

D

E

F

G

1

2

3

4

5

6

7

8

9

10

A4

BIM P12
REC670

LOCATION=P12

PLANT ADAPTED CONFIGURATION

SHT.240/D1 TO D10

+ - - - X121

- - - 1 BI.01 //

+ - - 2 BI.02 //

- - - 3 BI.03 //

+ - - 4 BI.04 //

- - - 5 BI.05 //

+ - - 6 BI.06 //

- - - 7 BI.07 //

+ - - 8 BI.08 //

- - - 9 BI.09 //

+ - - 10 BI.10 //

- - - 11 BI.11 //

+ - - 12 BI.12 //

- - - 13 BI.13 //

+ - - 14 BI.14 //

- - - 15 BI.15 //

+ - - 16 BI.16 //

A4

BIM P13
REC670

LOCATION=P13

PLANT ADAPTED CONFIGURATION

SHT.241/D1 TO D10

+ - - - X131

- - - 1 BI.01 //

+ - - 2 BI.02 //

- - - 3 BI.03 //

+ - - 4 BI.04 //

- - - 5 BI.05 //

+ - - 6 BI.06 //

- - - 7 BI.07 //

+ - - 8 BI.08 //

- - - 9 BI.09 //

+ - - 10 BI.10 //

- - - 11 BI.11 //

+ - - 12 BI.12 //

- - - 13 BI.13 //

+ - - 14 BI.14 //

- - - 15 BI.15 //

+ - - 16 BI.16 //

A4

BIM P14
REC670

LOCATION=P14

PLANT ADAPTED CONFIGURATION

SHT.242/D1 TO D10

+ - - - X141

- - - 1 BI.01 //

+ - - 2 BI.02 //

- - - 3 BI.03 //

+ - - 4 BI.04 //

- - - 5 BI.05 //

+ - - 6 BI.06 //

- - - 7 BI.07 //

+ - - 8 BI.08 //

- - - 9 BI.09 //

+ - - 10 BI.10 //

- - - 11 BI.11 //

+ - - 12 BI.12 //

- - - 13 BI.13 //

+ - - 14 BI.14 //

- - - 15 BI.15 //

+ - - 16 BI.16 //

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY NSK CHECKED BY JKR

DATE STARTED 15.3.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

BLOCK REFERENCE

SAS INTERFACE PANEL +SAS I/F-4

S/S 8709 S-13656

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

National Grid sa

INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.

P C421 CD-323017 295 296 00

NG/D2-D (2012/01)

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SHT.243/D1 TO D10

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